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ABSTRACT

This self-instructional learning packet is one part of a competency-guided program for instructional supervisor preparation developed by the Special Education Supervisor Training (SEST) project. This packet is intended to teach its users the Delphi technique for setting educational goals. Goal-setting is the necessary first step of any curriculum development effort, and the Delphi technique is a useful approach for obtaining community consensus on major goals. The Delphi technique employs a questionnaire that is mailed to a stratified random sample of community residents, who are asked to indicate their perception of major educational goals. After the opinions have been collated, each respondent is mailed a summary of responses and asked to agree or disagree with the most frequent response. Respondents are then mailed a final, revised summary of responses and are asked to repeat or revise their opinions. Users of the training packet complete a series of five task assignments relevant to selecting and writing goal statements and then test their knowledge by taking a short posttest. (JG)

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Independent Study Training Material

For

Professional Supervisory Competencies

Document #10a

THE DELPHI TECHNIQUE FOR CURRICULUM PLANNING ©

By Jane Duckett and Gwen Carter

A-1 Setting Instructional Goals

Special Education Supervisor Training Project
Department of Educational Administration
The University of Texas at Austin
1975

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PREFACE

The learning packets developed by the Special Education Supervisor Training Project (SEST) at the University of Texas at Austin are competency-guided training materials keyed to selected critical competencies for professional supervisory personnel in school leadership positions. A series of ten packets, each dealing with one of twenty-four critical competencies, has been developed. A list of the items available in the series appears on the last page of this document. These packets were developed locally to meet the need for independent study material to supplement formal training and field experiences in a professional preparation program.

This learning packet is intended for inclusion in a learning laboratory containing packets and many other types of materials for use in independent study. The equipment necessary to use those materials, as well as work space, is provided in the Learning Lab to assist users in choosing material and working through it at their own pace. A complete directory of material in the Learning Lab at the University of Texas Department of Educational Administration has been published by the SEST Project under the title, A Directory of Competency-Guided Supervisory Training Materials for Independent Study.

The learning packets have undergone extensive evaluation and revision through the coordinated efforts of several people. Corine Martinez

served as compiler and editor of the series. SEST students and research assistants involved in packet evaluations were Gwen Carter, Patricia Griner, Laurie Hunt, Mary Miller, Pat Miller, and Eliseo Ruiz. Final revisions on the packets were made by Ellen Victory Bell, Gwen Carter, Sharon Guajardo, and Jim Sanders.

Appreciation is expressed to all those who devoted time to the development of various learning packets: Carol Clark (Giesecke), Joan DeLuca, Stuart DeLuca, Jane Duckett, Pat Miller, and Drs. Ben Harris Billie Grace Herring, John D. King, Kenneth McIntyre, and Darryl R. Townsend.

The University of Texas at Austin

Ben M. Harris
John D. King
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OVERVIEW

Rationale:

Goal setting is the necessary preliminary step to any kind of curriculum development. It is important in special education that program goals be understood and supported both in the school system and in the general community, and this understanding and support needs to be established during the early phases of curriculum planning. The supervisor should be responsible for facilitating the process of goal clarification among these constituencies (Special Education Supervisor Training Project, 1974, p. 36).

Competency:

Given a mandate to clarify major goals of instruction, the supervisor can lead groups of parents, citizens, specialized personnel, teachers, and pupils through a series of discussions, presentations, training sessions, and other experiences to produce a report showing some of the most important instructional goals on which there is agreement.

Target Population:

This module is intended for graduate students who are enrolled in instructional leadership training programs.

Objectives:

On the knowledge level the student will be able to do the following:

1. Explain appropriate sampling techniques.
2. Write goal statements which are consistent with the educational philosophy of a school district and comprehensive in terms of the eighteen major goal categories on Page 37-41.
3. Differentiate between the two types of Delphi questionnaires.

Evaluation:

Upon completion of the module, the participant will be able to demonstrate competence with the Delphi technique on the knowledge level. The participant's post-test score will be accepted as evidence that he/she has attained the above objectives. (80% = 12 out of 15 items correct.)

DIRECTIONS

1. After reading the overview, read "Educational Goal Setting: The Delphi Technique," pages 4-6.

2. Complete the five task assignments following the instructions presented with each assignment. The task assignments are as follows:

   Task Assignment 1 - Statements of Philosophy
   Task Assignment 2 - Readings
   Task Assignment 3 - Selecting Goal Statements
   Task Assignment 4 - Criteria for Goal Statements
   Task Assignment 5 - Writing Goal Statements

3. Complete the post-test, page 31 and check your answers on page 48.

DESCRIPTION OF SITUATION AND TASK ASSIGNMENT

Description of Situation:

In this module, you are to read the materials in the order presented and to follow the instructions as they appear. You will be given the opportunity to develop skills in goal setting and in the use of the Delphi Technique.

Description of Task Assignment:

1. Read and study "Educational Goal Setting: The Delphi Technique," pages 4-6.

2. Task Assignment 1: Read two statements of philosophy and determine the category of each one. Write your answer on the Work Sheet, page 42.

3. Task Assignment 2: Read and study the following articles: "The Use of the Delphi Technique in the Forecasting Phase of C.B.T.E. Program Development" by Horace E. Aubertine and "The Delphi Technique: A Case Study" by Frederick R. Cyphert and Walter L. Gant.

4. Task Assignment 3: Read the California Goal Statements on page 37, select ten goal statements that you feel most logically apply to each statement of philosophy in Task Assignment 1. Write your answer on the Work Sheet, page 42.

5. Task Assignment 4: Read the information presented on the criteria for goal statements. Turn to the Work Sheet, page 42, and follow the instructions.

6. Task Assignment 5: Write five goal statements (1 each) involving five of the eighteen major goal categories on page 37. You are to assume the school district's philosophy places a major emphasis on intellectual development. Write your answers on the Work Sheet, page 43.

7. Take the Post-test. Write your answers on the Work Sheet, page 44 and check your answers on page 48.

8. Optional: Turn to page 34 and select one of the activities suggested as a follow-up of the module.

EDUCATIONAL GOAL SETTING: THE DELPHI TECHNIQUE

Part I. Introduction

Educational agencies of various kinds are frequently involved in determining their goals. Goal setting activities usually include representative samples of employees from the agency concerned (school district, university, state agency, etc.) plus samples of community members who are affected by or interested in schooling.

A variety of opinion-gathering methods could be used in obtaining consensus on major goals. Among these are questionnaires, personal or telephone interviews, broad-based committees, public hearings, or publicity in the local press with feedback invited.

A particular type of questionnaire, the Delphi technique, will be explored in this module. In some instances the avoidance of face-to-face communication between the respondents is beneficial. In group discussions, dominant individuals or "leaders" emerge and tend to influence the less dominant members. Group pressures to conform are very strong, and individual judgment can be distorted. Frequently the group discussion veers toward irrelevant issues and time is wasted.

The Delphi technique consists of a questionnaire which is mailed to participants in the sample. As originally developed by the RAND corporation, the initial step involves asking each participant to write his opinion on a given topic. For example, Aubertine (1974) asked participants, "What do you believe to be the major characteristics of performance- or competency-based education (p. 6)?" One page was allowed for responses.

After the opinions have been collated, each respondent is mailed a summary of responses and is asked to either agree with the most frequent response or to write a "minority" report indicating why he disagrees. In the final mail-out the participants receive an updated summary and are asked to repeat or revise their opinions (Uhl, 1971).

The above procedure is used when the pool of respondents is small (approximately 10-25). However, in goal setting activities of school districts, a large sample (approximately 100) is usually involved, and a "short-cut" must be found. The most common procedure is to devise in advance a closed-end questionnaire to mail to the participants, rather than using an open-end technique.

Part II. Procedures

A. Sampling

A procedure known as stratified random sampling is usually employed to achieve representation of a variety of viewpoints. Population members are identified who possess certain demographic traits, such as age, occupation, educational level, religion and ethnic group membership. Other types of groups represented might be school administrators, teachers, alumni, students, parents, teachers' associations, School Boards, and teacher training facilities.

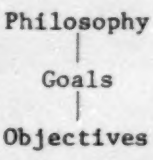
For example, if the sampling committee had decided to include students, ages 14-17, who are minority group members, persons in the school population meeting those requirements would be identified and listed numerically. A Table of Random Numbers (found in most statistics texts) would be used to identify and select the participants. Members of the population are selected in such a manner until the sample meets the desired size.

Stratified random sampling seems to be the best way to assure that all relevant groups are included. If school officials allow only selected citizens to participate, public support for the schools may not be achieved. However, many school districts use other procedures to select participants. An alternate method might involve nominations from each school for representatives to a district-wide steering committee (California State Legislature, 1972). For examples of several procedures used in districts of various sizes, see Filep, 1970.

After potential respondents have been identified, they should be contacted to see if they have the interest and the time to participate in two or three rounds of questionnaires. This prior committment to the project will help assure that the percentage of returned questionnaires is high enough for valid results.

B. Selection of Goal Statements

According to Gall, York, and Oakley (1972) goal statements are derived from statements of educational philosophy, which are very general. Goals are highly abstract statements of desired or valued competencies or attitudes. Goals are more specific than statements of philosophy but less specific than objectives, which are statements of quantifiable or observable achievement. Therefore, three levels of abstraction could be dealt with:



This module will be concerned with only the first two levels.

Goal statements, in addition to being abstract, should be compatible with the district's statement of philosophy. Most statements of philosophy reflect either a human purpose of education, a knowledge purpose, or a career purpose. Districts which are concerned with humanistic purposes will have goals that reflect mutual understanding among various groups, development of human relations skills, concern for the child's self-concept, etc. Schools which are primarily concerned with knowledge purposes will stress academic excellence, college preparatory courses, achievement testing, etc. Districts with a career purpose will probably be most concerned with pre-vocational training and development of favorable attitudes toward work.

TASK ASSIGNMENT 1: STATEMENTS OF PHILOSOPHY

Two fictitious statements of philosophy follow. For each statement, decide whether the major thrust is (a) humanistic, (b) intellectual or (c) vocational. Turn to the Work Sheet, page 42, and write your answer. Turn to page 46 and check your answer.

A. Statement of Philosophy

The purpose of the Cactus School District is to produce ranchers, housewives and veterinarians who will stay in Cactus and perpetuate our economy and Christian way of life. We want our students to be obedient to their teachers and parents, to revere the Flag, and to be hard workers.

B. Statement of Philosophy

The purpose of Harmony School District is to produce "Citizens of the World" who will work for peace, brotherhood, development of emerging nations, and conservation of the world's resources. Our students should be builders, not destroyers, and should appreciate the wisdom of the past. We want to produce well-rounded "Renaissance" men and women who will make the world a better place for All Mankind.

TASK ASSIGNMENT 2: READINGS

Read and study the following two articles so that you may become familiar with the use of the Delphi Technique. They are "The Use of the Delphi Technique in the Forecasting Phase of C.B.T.E. Program Development" by Horace E. Aubertine and "The Delphi Technique: A Case Study" by Frederick R. Cyphert and Walter L. Gant.

EXAMPLE A

THE USE OF THE DELPHI TECHNIQUE

IN

THE FORECASTING PHASE

OF

C.B.T.E. PROGRAM DEVELOPMENT

by

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PROPOSED FORECASTING PERIOD USING THE DELPHI TECHNIQUE

In developing an education plan, one of the fundamental assumptions is that it will involve a broad base of education personnel in the process. Another assumption is that the process will lead to planned innovation and the achievement of the anticipated objectives throughout the system.

The stages in developing and carrying out a plan may be viewed as basically four: (1) forecasting, (2) planning, (3) decision-making and (4) innovative procedure.

Forecasting has often been referred to as the pre-planning stage characterized by the assessment of current needs. But little attention has been given to the exploration and planning of "what ought to be" and how it can be integrated with "what is" in a systematic manner. The proposed model for rational creative action conatins a specific dimension or stage that provides for a period of forecasting preparatory to what normally is considered planning.

The central effort of the forecasting stage is to create a possible future for "what ought to be" in relation to the current status of the system. In the forecasting stage, there are essentially two types of strategies: exploratory and normative.

Exploratory forecasting is an approach that begins with the present and proceeds toward developing future expectations and goals based upon the data related to the present.

Normative forecasting is an approach that begins with the future or "ought to be's" and works back to the present.

In both approaches, the intent is to invent possible "futures" by searching out possible opportunities prior to full scale development and engineering of the planned innovation. Intuitive thinking, brainstorming and Delphi Technique would be characteristic of the strategies employed in the forecasting stage.

In the C.B.T.E. project, it is evident that some beginning has been made in exploratory forecasting during the past several months. It is now proposed that a more formalized and deliberate strategy in exploratory forecasting be implemented at this time. The purpose would be to gather data from other strata of the education system that would complement the data on hand and support the proposed C.B.T.E. project.

cont.

It is proposed that through the use of the Delphi Technique additional data be gathered from the various strata within the state education system that will provide additional and valuable insight relative to possible future directions of the state's education system, and also serve as a basis for a group profile to support and substantiate the need for change through competency-based education.

An advantage of the Delphi Technique is that it can be employed quickly without a great expenditure of time and resources on the part of personnel. Utilizing the exploratory forecasting approach with the Delphi Technique at this time will involve a broad base of education personnel in the process.

The projected exploratory forecasting period using the Delphi Technique would span a period of no more than three months. The population targets could be as follows:

1. College of Education faculty
2. Elementary teachers
3. Secondary school teachers
4. School administartive personnel
5. State Education Department personnel

The data collected from each group would be used to develop:

1. a group profile of like personnel (college faculty)
2. a combined profile of all personnel sampled

The anticipated time of three months would permit two rounds or possibly three of questions and answers to obtain sufficient data to construct the profiles.

The Mechanism of the Exploratory Forecasting Phase

Format

Each of the groups is to be contacted through the central office, preferably the Director's Office.

It is proposed that from 12 to 15 persons be in each group with the exception of the faculty of the College of Education. All faculty there would be involved in the process.

Each group will have a code symbol (such as College of Education--blue) and each member will be assigned a specific number which will appear on his packet and response sheet.

cont.

The packet will contain: instructions, a reading and a questionnaire. When the latter are completed they are to be returned to the Director's office and to be collated and forwarded for analysis. After the data have been analyzed and the profile established, the information will be returned to the Director and then channeled back to the respective groups with additional questions if necessary.

If there is a second round, it will follow the same procedure in processing and passage of data. If three rounds are necessary, the end result will be three profiles for each group and three composite profiles, all of which will be given to the participants at each stage of the process.

The profiles then become "input" and guidelines to the group designated to design the C.B.T.E. plan and should provide insights into possible direction and also into the degree of knowledge about the receptivity to the idea of competency-based education as an important strategy for change.

PARTICIPANT INFORMATION SHEET

The purpose of presenting this paper, "Competency Based Education: Change or Transfer" is to focus your thinking about competency-based education today in your state and the possible direction(s) it should take in the next several years.

You perhaps have formed definite opinions, either favorable or with reservations, regarding the idea of performance- or competency-based education as a potential for advancement of education within the state. It is with the intent of surveying your opinions that the questions below have been developed.

Upon completion and return to the Director, your responses will be pooled and a profile or composite picture of faculty views will be drawn. The description of this profile will be returned to each faculty member possibly with one or two follow-up questions. If the resulting follow-up responses modify the profile, the revised description also will be sent to each faculty member.

This application of the Delphi Technique is intended to identify the faculty outlook on possible future developments in education, and the possible uses of the competency-based notion in this development. Through this forecasting process, salient features about the possible use or misuse of the competency-based concept should help to identify in advance problems to be solved or prevented with a minimum expenditure of faculty time and energy.

1. What do you think the trend in education within your state will be over the next several years?

   a. Where do you think real changes will be made or occur?
   b. What do you think will be the main obstacles to change?

2. What do you believe to be the major characteristics of performance- or competency-based education?

3. In your view, does the idea of "competency-based education" offer a viable alternative in the advancement of education?

   a. If so, in what ways will it make its greatest contribution?
   b. If not, what do you see as the major drawback(s)?

4. If competency-based education is looked upon as a viable alternative that possibly could make a real change in education, what safeguards would you recommend to insure the probability that change would come about within a period of ten years?

5. If competency-based education is adopted as an operational approach in the advancement of education, what would you propose as the appropriate procedure in program development?

   Example A: A State Master Plan which identifies concurrent program development in teacher education, administrative education and elementary and secondary curricula?

   Example B: A State Master Plan which identifies specific institutions and school districts within the state that will develop programs within a particular area such as teacher education, administrative education, elementary and secondary curricula?

While there is no restriction on the length of the answers to each question, a rule of thumb would be one page per response to each question.

COMPETENCY BASED EDUCATION: CHANGE OR TRANSFER

by

Horace E. Aubertine

A great deal has been written about the need for change in education at all levels. Several alternatives have been advanced along the line that they represent viable pathways for change. Yet, as one surveys the results to date of applications of some of the alternatives, one questions whether any change has been effected at all.

Webster's definition of change denotes making or becoming distinctly different and either implies a radical transmutation of character or replacement with something else. Transfer, on the other hand, denotes a shift from one mode to another such as one car to another. The shift in a transfer from one car to another does not alter the character of transportation, but a transfer from a car to an airplane might.

The distinction between change and transfer might be slight in some cases, but nevertheless the words do represent two different types of movement or alteration. A teacher education program that offers a radical departure from the previous program represents a real change; while a teacher education program that shifts or rearranges essentially the same parts of the existing program can be said to have undergone only a transfer or perhaps a slight alteration.

In the evolutionary steps in the development of new teacher education programs, it may be that in getting from Point A to the projected goal, Point C, an intermediate point or points such as A_1, B, B_1 may be necessary and desirable; for, far too often, abrupt and rapid change causes more problems than it solves and destroys the valuable along with the obsolete.

In teacher education, the competency-based concept has made a considerable impact. Its proponents hail the increasing number of competency-based teacher education programs and developing interest in state certification as movement toward real change. Several competency-based teacher education programs purported to represent change are really more in the nature of transfer and only represent minor alterations at best in established programs for preparing teachers.

For example, the concept of microteaching developed at Stanford in the early sixties was a possible breakthrough for change in education.

One may call it a "change potential" when incorporated into a teacher education program so as to significantly alter the program's direction and outcomes. In cases where microteaching was used as a systematic clinical teaching experience prior to student-teaching in the field, it represented a change in that teacher education program. But in cases where microteaching was used to replace partially or totally the student-teaching experiences within the existing program, it represented a transfer with little or no real program change.

Another example of the difference between change and transfer in competency-based programs can be found the method of assessment of a candidate's progress through the program. In the traditional programs, candidates are evaluated on comprehension of knowledge about teaching with few, if any, requirements to demonstrate skill or proficiency in teaching outside of student-teaching. Competency-based programs that maintain this assessment posture and practice cannot be construed as representing a real change: rather they represent a shift or transfer from one mode to another within essentially the same program structure. A competency-based teacher education program that does qualify as a potential for real change not only tests for comprehension of knowledge, but also assesses the demonstration of skills that a candidate must have to apply that knowledge in teaching.

Another illustration is in the use of "Systems Design" construction of instructional modules in the competency-based teacher education programs in operation today. In several of these programs, the modules reflect a high degree of similarity to prepared lectures and readings already used in the traditional program. Use of modules may be the initial step toward the desired to yet-to-be determined change in a program, but to call competency-based a program that merely employs a different form of packaging (modules) without first examining and altering the substance within a rational conceptual plan is an exercise in self-deception.

If a competency-based teacher education program has a clear-cut rationale and purpose and if the system and the modules are developed in conjunction with the purpose and rationale, then that program can be legitimately labeled as a viable one to bring about a real change in teacher education. The very fact that a clearly defined rationale exists represents a distinct departure from most teacher education programs.

One of the major components of system engineering is an ongoing assessment or formative evaluation of the program. The purpose of this component is to identify problems, weaknesses and strengths in the program and to make the necessary modifications and improvements as rapidly as possible. In several competency-based teacher education programs, there is an absence of any mechanism that could be construed as being an on-going assessment component within the total system. Whatever program assessment procedures exist are usually of an ad hoc or afterthought basis and related to a specific part of phase of the program rather than to the total program.

Furthermore, in competency-based teacher education programs intended to be an alternative to the traditional programs, the student-teaching dimension should be more closely linked to the academic dimension. Rather than continuing the present tendency toward complete laissez-faire student-teaching experiences as in most traditional programs, there should be a core of identified experiences and skills that candidates should have, along with criteria levels of assessment and rating instruments designed to assess these experiences and skills.

In addition, the cooperating or supervising teacher in the field should be an actively participating member in the teacher education program. The supervising teacher in some programs has been identified as an "adjunct faculty member" in recognition of this emerging role. But, beyond this, the supervising teacher must be a participant in the on-going assessment, revision and modification of the program if a real change and not a shift or transfer is to occur in the teacher education program.

Another example of a potential for real change in teacher education is the concept of teacher centers situated in populated areas away from the campus. Theoretically, the centers are to serve as more than a collection and dispersal station for student-teachers; programs for staff development, curriculum design, and training of supervising teachers, under the "umbrella" of continuing education, are to be a major part of the teacher center operation. The teacher centers would be coordinated with the collegiate programs in a mutually complementary manner. But if in practice the teacher centers are little more than decentralized places for assigning student-teachers and following the traditional student-teaching patterns, then the claim of <u>change</u> is a misnomer, as the teacher centers would represent only a <u>transfer</u> of an administrative function from campus to center.

Assuming that C.B.T.E. programs may fall into either the category of change or transfer, the question arises as to what kinds of strategies would insure that real change comes about? Put in another way, what kinds of safeguards can be used to prevent a potentially innovative program in education from becoming merely an old program wrapped in a new package?

As is usual with any program involving many people with varied interests and backgrounds, there is not one single solution or strategy that fits every purpose. But it seems that there are generally three types of approaches or strategies employed in program development from which variations or spin-offs can be developed. The first approach has the characteristics of a <u>deductive strategy</u>, which develops a conceptual model or theory and then parts of the program to fit the model. The advantage of this approach is that the program developers have established a prototype of a teacher, explicitly or implicitly stated, through the development of a model prior to the "nuts and bolts" process of

assembling the program. The drawback to this approach is that the program developers become "locked in" and seek out only those factors and materials that "fit the model"; consequently, they could overlook significant findings which would have a bearing upon the training of teachers. The nine model elementary teacher education programs developed through U.S.O.E. grants might be generally classified as examples of the deductive strategy in program development.

A second approach to designing teacher education programs may be classified as an inductive strategy. Using this strategy, the program developers focus on parts of the program either singly or in units and either develop new or revise existing parts. Each element or part is developed independently of any model or preconceived conceptualization; in this approach it is assumed that a prototype or pattern will eventually emerge.

The advantage of the inductive approach is that it frees the program designers from any previous constraints. The whole universe is their field of operation, and any and all data and practices are possibly acceptable to their program. The obvious drawback in this approach is the danger of accepting everything without any type of rationale or organizing pattern; as a result the program may end up looking like a Rube Goldberg invention.

A third strategy might be labeled as an "eclectic" one in which neither the extreme parts of the inductive or deductive strategies can dominate the process. This approach utilizes a reciprocating "back and forth" interaction between inductive and deductive views, capitalizing on the advantages of each. For example, a model is developed which conceptualizes the prototype teacher whom the designers believe to be the focal image to build the program around. Yet, the model is considered only an approximation and can be altered as new data are discovered and incorporated into the design.

The danger in this approach is that the designers may never get to translating the blueprint into an operational program because they may become too "tentatively" oriented, and the original objective becomes superceded by another and yet another in a search for the ultimate model. Consequently, the designers hesitate to put into action a program that is regarded as an approximation subject to revision and modification as new data are introduced.

In addition to the above strategies in program development, and perhaps because of them, there are certain clues or signals that indicate to the astute observer whether or not a projected innovative program is truly progressing toward its stated objectives.

In cases where C.B.T.E. programs have a high degree of success in effecting change, there is one variable that is evident in all of them. This is the application of gradualism, and/or use of pilot-testing of

programs and components on a relatively small scale before full implementation. This is not to state that it is the only variable, but it appears to be one of the critically necessary variables in new program development and innovation.

Conversely, in programs that have had a great many problems and their success minimized, one single factor that stands out is the rapidity with which the architects throw out the old and initiate the new. The predominant thinking from directors is that "unless you force it to happen, it won't happen." Unfortunately, what has happened in several cases where this philosophy has been employed is that there have been explosive and negative outcomes.

Two excellent examples of the use of gradualism in C.B.T.E. program development are the teacher education program at the University of Houston and the teacher education program at Florida International University. In the first case, a new program was developed, tested, and refined over a period of time and gradually replaced the traditional system. This permitted the reallocation of resources and the training or re-training of personnel to be done in a relatively systematic and gradual manner, minimizing the disruptive tendencies or influences that could occur in a transition from one program to another.

Florida International University, a new university, in the development of their C.B.T.E. program had the unique advantage of starting from scratch. The decision-makers were cognizant, however, that program development does require sufficient lead time and resources and the deans were given the necessary planning time to get the job done.

Another example of a C.B.T.E. program that has experienced a great deal of success in moving from blueprint into action is the program at the University of Toledo. One of the outstanding features features was the O. D. model that was established and operated by Gentry, Morris, and Hirsch. Whenever a "pinch" or a problem appeared, a method to retract for handling of the problem in an open and understanding manner not only facilitated the resolution of the problem, but demonstrated the receptive attitude of the program managers to the issues raised by a consensus of the participants within the program. Commitment was generated by the managers through their recognition that problems would occur, that the participants in the program were valued as contributors, and that their input should not only be sought but also considered in the D-M process.

Conversely, in programs having extreme difficulty in realizing proposed objectives there is often too little provision for communicating from bottom to top as well as from top to bottom in the organizational hierarchy. In those cases where a high degree of resistance and outright opposition to the new program accrues, there is usually a very small, tightly knit group making all of the decisions. This is a

clear example of what some psychologists label "Groupism" in which the D-M cannot or will not tolerate a difference of opinion or suggestions that appear to run contrary to the established plan. Consequently, through the collective "mind guard posture" of the directors, the attempted innovation turns into a fiasco. Thus, the anticipated change in teacher education never occurs. A different kind of change takes place, one that is reactionary and detrimental to the progress of teacher education in those institutions.

It seems, therefore, that a key ingredient in making a real program change in C.B.T.E. as opposed to a transfer is management. If managers are skillful and approach the task of program development with a realistic view of what to do and what to avoid, then the program objectives will more likely be reached.

Some of the characteristics of managers who have success in developing C.B.T.E. programs and are in a position to make a change are as follows:

1. An awareness of education problems and belief or conviction that a change can be made and that it will mark an improvement over the existing program.
2. A view that change within the system (i.e., teacher education) can be or will be linked to a larger system and/or the policies and purposes of a larger system (school and society).
3. A view of program change as being long-range in nature as well as short-range.
4. A view of institutions as means to ends as opposed to a view of institutions as being set in a permanent or unmodifiable mold.
5. The intuition to select and/or develop models that reflect a dynamic view of the world and to perceive incompatibility of models that are static within a changing society.
6. The ability to realize that program innovations are not the same as tinkering with one variable or component or manipulating and modifying under conditions that are highly controllable with "fail-safe" guards built in.
7. The ability to recognize that program planning and development should include many people with diverse views and that these must be taken into account in D-M. (Unanimous agreement may be more indicative of the suppression of a problem than recognition that the correct decision has been made.)
8. The ability to see that the D-M process is not exclusively a one-man operation, but rather that clearly delegated roles with defined D-M authority and shared responsibilities, identified and fixed, are vital to obtaining commitment from a broad range of personnel.

9. The ability to recognize that communication regarding proper planning and development must allow for multi-flow of information exchange. There must be vertical flow from the bottom to the top as well as vice versa. Also, there must be horizontal flow of information at the various levels of the D-M hierarchy.

TASK ASSIGNMENT 3: SELECTING GOAL STATEMENTS

1. Read the California Goal Statements, pages 37-41.

2. For both Statement of Philosophy A and Statement of Philosophy B, select the 10 goal statements on pages 37-41 that you feel would most logically follow from each statement of philosophy.

3. Turn to the Work Sheet, page 42, and mark you answers according to the instructions.

4. Turn to page 46, and check your answers.

TASK ASSIGNMENT 4: CRITERIA FOR GOAL STATEMENTS

Thus far we know that goal statements should be abstract and consistent with the district's philosophy. In addition to these criteria, goals chosen should be comprehensive with respect to major areas of a student's life. Goal groups could include such areas as intellectual development, ability to change, human relations, democratic principles, consumer efficiency, physical and emotional development, career education, etc. There are no "hard and fast" rules about which areas to include. A general guide is that all the goals taken together should form the "ideal person" (Gall, York & Oakley, op. cit).

The California School Boards Association has been gathering and collating goals for inclusion in a goal data bank. They have found 18 discrete goal categories, which have been adopted by Phi Delta Kappa (Lewis, 1974). Their categories and sample goal statements form the California Goal Statements in the Appendices.

After the initial goal statements are written, they should be edited to eliminate redundancy. Also, some writers advocate expressing all goal statements in terms of student outcomes. If goal setters adopted this criterion, statements such as, "To guarantee academic freedom to teachers" would be either eliminated or re-written in terms of student needs. However, many districts do not accept this criterion. It is common to find goals concerning fiscal soundness of the district and other areas not directly related to student experiences.

Turn to the Work Sheet, page 42, and follow the instructions. Then turn to page 46 and check your answers.

ASSIGNMENT 5: WRITING GOAL STATEMENTS

Assume that your district's philosophy places a major emphasis on intellectual development. Without referring to the California Goal Statements in the Appendices, write five goal statements (1 each) involving five of the eighteen major goal categories. Write your statements on the Work Sheet, page 43. Check your answers on page 47.

POST-TEST

Directions: Turn to the Post-Test section of the Work Sheet, page 44, and follow the instructions.

1. The medium of communication used by the Delphi technique is

   (a) telephone
   (b) mail
   (c) personal interview
   (d) committees

2. The statistical technique used to assure that all participants in the sample are chosen randomly and that all major population groups are represented is called

   (a) stratified random sampling
   (b) diversified random sampling
   (c) multiple random sampling
   (d) group random sampling

3. Educational goal statements are derived from statements of

   (a) community philosophy
   (b) educational philosophy
   (c) democratic philosophy
   (d) all of these

4. The statistical term given for the most frequent response is

   (a) mean
   (b) median
   (c) mode
   (d) medium

5. Three purposes of educational philosophy usually expressed in statements of educational philosophy are

   (a) conceptual, humanistic, technical
   (b) citizenship, vocational, self-development
   (c) knowledge, career, humanistic
   (d) intellectual, conceptual, career

6. If a sample is large, the most common procedure to use is

   (a) the closed-end questionnaire
   (b) the open-end questionnaire
   (c) the technical questionnaire
   (d) none of these

7. Goals are highly abstract statements of desired or valued

   (a) objectives
   (b) competencies
   (c) knowledge
   (d) concepts

8. In the case study presented by Cyphert and Gant, the authors found that the Delphi technique can be used to

   (a) mold opinions
   (b) formulate opinions
   (c) select opinions
   (d) none of these

9. Aubertine defines stages in developing and carrying out a plan. Which of the following is such a stage?

   (a) analyzing
   (b) decision - making
   (c) innovation
   (d) planning

10. The types of strategies in the forecasting stage are as follows:

   (a) synthesizing
   (b) exploration
   (c) analyzing
   (d) normative

11. The Delphi technique is associated with one of the following strategies in the pre-planning stage:

   (a) innovation
   (b) organization
   (c) analyzing
   (d) exploratory

12. The data collected from each of the professions would be used to develop the following profile of like personnel (college faculty):

   (a) combined
   (b) similar
   (c) group
   (d) statistical

13. The data collected from each of the professions would be used to develop the following profile of all personnel sampled:

   (a) statistical
   (b) group
   (c) similar
   (d) combined

14. There are usually at least how many rounds of questions and answers to obtain sufficient data to construct the profiles?

(a) 4
(b) 2
(c) 1
(d) 5

15. The Delphi technique is a carefully designed program of

(a) plans
(b) questions
(c) information
(d) feedback

SUGGESTED FOLLOW-UP ACTIVITIES

1. Visit the school district in the community where you reside, read their statement of philosophy, and classify it according to type.

2. Go the the Education Administration library at your University and search for sample philosophy statements in texts dealing with educational philosophy.

3. Write a statement of philosophy stressing intellectual development of the students.

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APPENDICES

THE DELPHI TECHNIQUE FOR CURRICULUM PLANNING

CALIFORNIA GOAL STATEMENTS*

Phase I

Educational Goals and Categories

Goal Categories	Goal Statements
1. ACCUMULATION OF KNOWLEDGE	A. Develop a general education background in oral and written English, in the use of numbers, natural sciences, reading, mathematics, and social sciences. B. Develop a fund of information and concepts. C. Develop a knowledge of political principles and their evolution. D. Develop special interests and abilities.
2. SKILL TO ACQUIRE AND TRANSMIT KNOWLEDGE	A. Develop communicative skills and the abilities to communicate ideas effectively. B. Develop skills in oral and written English, and mathematics. C. Develop skills in the use of foreign languages. D. Develop skills to communicate ideas and feelings effectively.
3. SKILL TO USE AND EVALUATE KNOWLEDGE	A. Develop ability to evaluate constructively and creatively. B. Develop ability to use scientific methods. C. Develop advanced quantitative reasoning. D. Develop analytical methodology and logic. E. Develop thought processes rather than abilities for rote memorization.

*In addition to these goal statements, the SEST files contain 8 documents pertaining to goals and the Delphi technique. They can be found in A-1 listed under Delphi.

4. DESIRE FOR KNOWLEDGE AND CONTINUING EDUCATION	A. Develop intellectual curiosity and eagerness for lifelong learning. B. Develop a positive attitude toward learning. C. Develop a positive attitude toward continuing independent education.
5. ADAPTABILITY	A. Develop problem solving competence. B. Develop the ability to adjust to a changing environment. C. Develop an awareness of the expanding environment and develop abilities to cope with resulting problems. D. Develop understanding of the past, identify with the present, and competence to meet the future. E. Develop flexibility and appropriate attitudes toward change. F. Develop ability to adjust to the changing demands of society.
6. PEER RELATIONSHIPS	A. Develop appreciation and respect for the worth and dignity of individuals. B. Develop respect for individual worth and understanding of minority opinions and acceptance of majority decisions. C. Develop a cooperative attitude toward living and working with others. D. Develop a cooperative attitude in daily relations with others. E. Develop a sense of honor and respect for self and others. F. Develop an awareness of the processes of individual relationships.
7. INDIVIDUAL RELATIONSHIPS WITH STATE AND LOCAL AGENCIES	A. Develop and understanding of the meaning of citizenship by precept and example. B. Develop an awareness of civic rights and responsibilities. C. Develop attitudes conducive to productive citizenship in a democracy. D. Develop an attitude of respect for personal and public property. E. Develop an understanding of the obligations and responsibilities of citizenship.

8. DEMOCRATIC PRINCIPLES AND LOYALTY	A. Develop loyalty to American democratic ideals. B. Develop patriotism and loyalty to ideas of democracy. C. Develop knwoledge and appreciation of the rights and privileges in our democracy. D. Develop an understanding of our American heritage.
9. INTER-RELATIONSHIPS OF PEOPLES	A. Develop respect for cultural heritages of other peoples of the world. B. Develop an appreciation for and an understanding of other people and other cultures. C. Develop an understanding of political, economic, and social patterns of the rest of the world. D. Develop awareness of the interdependence of races, creeds, nations, and cultures. E. Develop an awareness of the processes of group relationships.
10. PHYSICAL HEALTH AND SAFETY	A. Develop an understanding of good physical health and well being. B. Establish sound personal health habits. C. Foster correct health habits and health information. D. Establish an effective individual physical fitness program. E. Develop a concern for public health and safety.
11. MENTAL HEALTH	A. Develop a feeling of student pride in his achievements and progress. B. Develop self-understanding and self-awareness. C. Develop the student's feeling of positive self-worth, security, and self-assurance. D. Develop an understanding of the importance of mental health and the importance of physical and mental well being.
12. CHARACTER DEVELOPMENT	A. Develop moral responsibility and a sound ethical and moral structure.

B. Develop an understanding of moral behavior.
C. Develop the student's capacity to discipline himself to work, study, and play constructively.
D. Develop a moral and ethical sense of values, goals, and processes of free society.
E. Develop standards of personal character and ideas.

13. AESTHETIC

A. Develop abilities for effective expression of ideas and cultural appreciation (fine arts).
B. Cultivate appreciation for beauty in various forms.
C. Develop the ability to enjoy aesthetic expression by others.
D. Develop creative self-expression through various media (art, music, writing, etc.)
E. Develop special talents in music, art, and literature.

14. AVOCATIONAL AND LEISURE

A. Develop ability to use leisure time productively.
B. Develop a positive attitude toward participation in a range of leisure time activities--physical, intellectual, and creative.
C. Develop appreciation and interests which will lead to wise and enjoyable use of leisure time.
D. Develop ability for constructive avocational pursuits.

15. CAREER AND OCCUPATIONAL SELECTION

A. Promote growth in self-understanding and self-direction in relation to student's occupational aspirations.
B. Develop the student's ability to use counseling and guidance services which are designed to aid him in his consideration of courses of study related to his skills and interests.
C. Develop the ability to use information and guidance services related to the selection of a vocation.
D. Develop an appreciation of good workmanship and skills in performance.

16. CAREER AND OCCUPATIONAL PREPARATION

A. Develop abilities and skills needed for immediate employement.
B. Develop a knowledge of the practical facets of various vocational fields through an exploratory program.
C. Develop a knowledge of specific information about a particular vocation.
D. Develop an awareness of opportunities and requirements related to specific vocations.
E. Develop a knowledge of how and where to seek placement help upon completion of particular occupational preparation programs.

17. HOMEMAKING

A. Develop understanding and appreciation of the principles of living in the family group.
B. Develop attitudes conducive to acceptance of responsibilities as contributing family members.
C. Develop an awareness of future family responsibilities and achievement of skills in preparing to accept them.

18. ECONOMIC AND CONSUMER EFFICIENCY

A. Develop the student's economic competency and marketable skills.
B. Develop an understanding of economic principles.
C. Develop competence and understanding in personal buying, selling, and investment.
D. Develop an understanding of monetary exchange for goods and services and of the wise use of materials.
E. Develop an understanding of economic responsibility.
F. Develop an understanding of the values of natural and human resources.

THE DELPHI TECHNIQUE FOR CURRICULUM PLANNING

WORK SHEET FOR ASSIGNMENTS

Assignment One:

Statement of Philosophy A (Check one only)

_____(a) humanistic

_____(b) intellectual

_____(c) vocational

Statement of Philosophy B (Check one only)

_____(a) humanistic

_____(b) intellectual

_____(c) vocational

Assignment Three:

Circle the ten goal statements that you selected for Statement of Philosophy A and underline the ten goal statements that you selected for Statement of Philosophy B.

1A	1B	1C	1D	2A	2B	2C	2D	3A	3B
3C	3D	3E	4A	4B	4C	5A	5B	5C	5D
5E	5F	6A	6B	6C	6D	6E	6F	7A	7B
7C	7D	7E	8A	8B	8C	8D	9A	9B	9C
9D	9E	10A	10B	10C	10D	10E	11A	11B	11C
11D	12A	12B	12C	12D	12E	13A	13B	13C	13D
13E	14A	14B	14C	14D	15A	15B	15C	15D	16A
16B	16C	16D	16E	17A	17B	17C	18A	18B	18C
18D	18E	18F							

Assignment Four:

Select the criteria for acceptable goal statements by placing a check (✓) on the blank next to the correct answer(s). Leave incorrect answers blank.

(Assigments, page 2)

_____(a) analyzing

_____(b) abstract

_____(c) PERT networking

_____(d) consistent with philosophy

_____(e) comprehensive in terms of major areas

_____(f) forecasting

_____(g) expresses student needs

_____(h) questionnaires

Assignment Five:

Write your five goal statements in the space below.

Respondent's Name_____ Date_____
or Soc. Sec. No.

THE DELPHI TECHNIQUE FOR CURRICULUM PLANNING

WORK SHEET FOR POST-TEST

1. Underline one answer only.
   (a) telephone
   (b) mail
   (c) personal interview
   (d) committees

2. Underline one answer only.
   (a) stratified random sampling
   (b) diversified random sampling
   (c) multiple random sampling
   (d) group random sampling

3. Underline one answer only.
   (a) community philosophy
   (b) educational philosophy
   (c) democratic philosophy
   (d) all of these

4. Underline one answer only.
   (a) mean
   (b) median
   (c) mode
   (d) medium

5. Underline one answer only.
   (a) conceptual, humanistic, technical
   (b) citizenship, vocational self-development
   (c) knowledge, career, humanistic
   (d) intellectual, conceptual, career

6. Underline one answer only.
   (a) the closed-end questionnaire
   (b) the open-end questionnaire
   (c) the technical questionnaire
   (d) none of these

7. Underline one answer only.
   (a) objectives
   (b) competencies
   (c) knowledge
   (d) concepts

(Post-test, page 2)

8. Underline one answer only.
   (a) mold opinions
   (b) formulate opinions
   (c) select opinions
   (d) none of these

9. Underline one or more answers.
   (a) analyzing
   (b) decision making
   (c) innovation
   (d) planning

10. Underline one or more answers.
   (a) synthesizing
   (b) exploration
   (c) analyzing
   (d) normative

11. Underline one answer only.
   (a) innovation
   (b) oranization
   (c) analyzing
   (d) exploratory

12. Underline one answer only.
   (a) combined
   (b) similar
   (c) group
   (d) statistical

13. Underline one answer only.
   (a) statistical
   (b) group
   (c) similar
   (d) combined

14. Underline one answer only.
   (a) 4
   (b) 2
   (c) 1
   (d) 5

15. Underline one or more answers.
   (a) plans
   (b) questions
   (c) information
   (d) feedback

Respondent's Name_____Date_____
or Soc. Sec. No.

THE DELPHI TECHNIQUE FOR CURRICULUM PLANNING

ANSWERS TO ASSIGNMENTS

Assignment One:

c	vocational	Statement of Philosophy A
a	humanistic	Statement of Philosophy B

Assignment Three:

The choice of goal statements could be debated, so there are no absolutely right or wrong answers.

For Statement A the likely choices that you might have circled are as follows:

6A 6C 6D 6E 7A 7B 7C 7D 7E 8A 8B
8C 8D 12A 12B 12C 16A 16C 16D 17A 17B 17C
18A 18B 18C 18D 18E 18F

For Statement B, there are many goal statements that are applicable. The most likely choices that you might have underlined are as follows:

1A 1B 1C 1D 2A 2B 2C 2D 3A 3B 3E
4A 5A 5B 5C 5D 5E 5F 6A 6B 6C 6D
6E 6F 7A 7B 7C 7D 7E 8A 8B 8C 8D
9A 9B 9C 9D 9E 12A 12B 12C 12D 12E 14A
14B 15A 15B 15C 15D 16B 16C 16D 16E 17C 18B
18E 18F

Assignment Four:

The following answers should have a check as being appropriate criteria for acceptable goal statements.

✓ (b) abstract
✓ (d) consistent with philosophy
✓ (e) comprehensive in major areas
✓ (g) expresses student needs

(Answers to Assignments, page 2)

Assignment Five:

Refer to page 37 and find out how many of your goal statements are similar to the California Goal Statements. Perhaps you have incorporated more than one of these goal statements into each of your statements.

THE DELPHI TECHNIQUE FOR CURRICULUM PLANNING

ANSWERS TO POST-TEST

		References
1.	(b)	Page 4
2.	(a)	Page 5
3.	(b)	Page 5
4.	(c)	Cyphert & Gant, page 26
5.	(c)	Page 6
6.	(a)	Page 4
7.	(b)	Page 5
8.	(a)	Cyphert & Gant, page 26
9.	(b), (c), (d)	Aubertine, page 11
10.	(b), (d)	Aubertine, page 11
11.	(d)	Aubertine, page 11
12.	(c)	Aubertine, page 12
13.	(d)	Aubertine, page 12
14.	(b)	Augertine, page 12
15.	(b), (c), (d)	Cyphert & Gant, page 24

LIST OF INDEPENDENT STUDY MATERIAL

DEVELOPED BY THE SEST PROJECT

The Delphi Technique for Curriculum Planning
A-1 Setting Instructional Goals (Document #10a)

Designing a Concept Development Unit
A-2 Designing Instructional Units (Document #10b)

Designing a Study of Available Resources
B-3 Evaluating the Utilization of Learning Resources (Document #10c)

Developing Job Descriptions
C-1 Developing a Staffing Plan (Document #10e)

Material Selection
B-1 Evaluating and Selecting Learning Materials (Document #10d)

Preparing School News Releases for the Media
G-1 Informing the Public (Document #10h)

Selecting Personnel for a New School Program
C-2 Recruiting and Selecting Personnel (Document #10f)

Self-Instructional Module on Time Utilization
D-1 Revising Existing Structures (Document #10g)

OTHER RELATED PUBLICATIONS

A Directory of Competency-Guided Supervisory Training Materials for Independent Study (Document #9)

A Selected Bibliography for Professional Supervisory Competencies (Document #8)